Seroprevalence of Neosporosis in Dogs from Center and North-West of Romania

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Abstract. Neospora caninum is a protozoan responsible for cattle abortions worldwide. In dogs, the infection with this parasite can cause a severe disease represented by various clinical signs as ataxia, ascending paralysis and nervous symptoms. It can also determine myocardial, pulmonary and dermatological lesions.

Keywords: neosporosis, dogs, Romania, IFAT

Introduction. Dogs (Canis familiaris) have an important role in epidemiology of N. caninum infection as they are, together with coyotes (Canis latrans) and wolves (Canis lupus) the only definitive hosts that shed oocysts in the environment (Gondim et al., 2004, Dubey et al., 2011). Seroprevalence of this disease in healthy dogs reaches about the same percentage as the one in dogs that presented clinical signs, aspect that suggests that this infection is mostly asymptomatic.

Materials and methods. For establishing the seroprevalence of neosporosis in dogs a number of 657 sera samples were collected from center and north-west of Romania. Most of the samples were collected from males (381) than females (276). Their age varied from 6 weeks to 15 years and because of that they were divided in three categories: dogs under 1 year old, between 1 and 5 years old and over 5 years old. Urban dogs were better represented (403) than rural dogs (254). For detection of antibodies against N. caninum we used an IFAT commercial kit (MegaScreen Fluoneospora, Megacor, Austria) and the results were interpreted at initial dilution of 1:50. For positive samples serial dilutions until 1:800 were made to observe the intensity of the infection.

Results and discussions. The overall seroprevalence of neosporosis in dogs at a cut-off dilution of 1:50 was 32.3% (95% CI 28.7-36.0%). These values decreased at next dilutions: 15.1% at 1:100, 9.1% at 1:200, 4.6% at 1:400 and 2.4% at 1:800 dilution. Statistically (p=0.003) females (38.0%, 95% CI 32.3-44.1%) were more affected than males (28.1%, 95% CI (23.7-32.9%) at 1:50 dilution. The most affected were the dogs with age older than 5 years (37.5%, 95% CI 30.3-45.1%) probably because of their weak immune system. The differences between age groups were statistically significant, p=0.0068. In rural dogs the seroprevalence of neosporosis was higher (34.3%) than in urban dogs (31.0%), but not significant.

Conclusions. Neosporosis is a serious problem worldwide and the value of 32.3% of infection in dogs taken under study reveals the fact that also in Romania a large number of dogs are infected with this parasite. Dogs are more affected as their age increases, infection reaching a value of 37.5% in dogs older than 5 years.

References
